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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,354	03/12/2004	Michio Nakayama	H6810.0071/P071-B	5603

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EXAMINER

PALABRICA, RICARDO J

ART UNIT PAPER NUMBER

3641

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/798,354

Applicant(s)

NAKAYAMA ET AL.

Examiner

Rick Palabrica

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 13-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/12/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. Applicant's 3/12/04 preliminary amendment, which amends the specification, cancels claims 1-12 and adds new claims 13-15 that are now pending, is acknowledged.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamada et al. (JP 2000-329885).

The claims are product-by-process claims, as evidenced by the recitation of the method of the attachments of the following structural elements of the claimed product (i.e., a control rod): a) the tip of each sheath is welded to the tie rod (see claim 13); b) an upper edge of each sheet is welded to the handle (see claim 14); c) a lower edge of each sheath is welded to the lower part support member (see claim 15).

In regard to these claims, MPEP 2113 states:

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777F.2d 695, 698, 227 USPQ 964, 966.

Yamada et al. disclose a control rod of nuclear reactor and its method of manufacturing. The structural elements of the claimed invention are disclosed in Yamada et al. (e.g. see Figs. 8 and 25) as follows:

- a) tie rod having a cruciform cross section – element 9;
- b) handle attached to an axial upper part of tie rod – element 4;
- c) lower part support member or velocity limiter attached to an axial lower part of tie rod– lower blade element 5;
- d) U-shaped sheaths attached to tips of tie rod, attached to lower end of handle, and attached to upper end of lower support member or velocity limiter – element 7.

As to the limitation in claim 13 of the tie rod having steps, see Fig. 8(c) that shows the tie rod 9 having notches at the ends on which sheath 7 is disposed.

As to the limitation of the handle having a step (claim 14) and the limitation of the lower support member or velocity limiter having a step (claim 15), Yamada et al. disclose that slits are provided in the handle and in the lower blade (see col. 3, lines 21+). Claim language “step” reads on slits.

As to the attachment of: a) the tip of the sheaths to the tie rod,; b) the upper edge of the sheaths to the handle; and c) the lower edge of the sheaths to the lower part support member or velocity limiter, see Fig. 25, that shows assembly of the complete control rod. As to the welding of these 3 parts of the control rod, see English

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language translation on page 4, last paragraph. Note that the term “blade” refers to the neutron absorber 6 enclosed by the sheath 7. The sheath provides a buffer between the neutron absorber and the reactor coolant.

The claims are replete with statements that are statements of intended or desired use. For example, “for boiling water reactor”, “for welding the sheaths at the tips of the cruciform arms”, etc. These clauses, as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference, as long as the structure of the cited references is capable of performing the intended use. See MPEP 2111-2115.

See also MPEP 2114 that states:

A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647.

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531.

[A]pparatus claims cover what a device is, not what a device does.”
Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

As set forth in MPEP 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

Yamada et al.’s control rod is capable of being used in the same manner and for the intended or desired use as the claimed invention. In fact, their control rod is for a boiling water reactor.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawashima et al. (U.S. 6,028,906) in view of Yamada et al. (U.S. 6,647,082).

Kawashima et al. disclose the applicant's claims except for the welding of the control blade sheath to the step of handle and to the step of the lower part support member or velocity limiter

Kawashima et al. disclose a control rod for a boiling water reactor and its method of manufacturing. They disclose in Figs. 1-4 a control rod having: a) tie rod with cruciform cross section (5); b) handle attached to an axial upper part of tie rod (2); c) lower part support member or velocity limiter attached to an axial lower part of tie rod (6); d) U-shaped sheaths (3) attached to tips of the tie rod, attached to lower end of handle, and attached to upper end of lower support member or velocity limiter.

Note from Fig. 1(a) that the tie rod 5 is provided with steps, and that the U-shaped sheaths are welded to the end of the tie rod (see col. 3, lines 47+).

Yamada et al. teach a method for manufacturing a control rod for a boiling water reactor, including the welding of the blade to the tie rod, the blade to the handle and the blade to the lower blade (see Fig. 21 and col. 16, lines 48+). They also teach provision

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of slits in the handle and in lower blade, which slits hold the blade prior to welding (see col. 3, lines 20+).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus, as disclosed by Kawashima et al., by the teaching of Yamada et, to use a weld attachment of the sheath to the handle and the sheath to the lower support member, both handle and lower support members having a step or slit to hold the blade, to gain the advantages thereof (e.g., provide robust attachment of blade by slit and welding), because such modification is no more than the use of well-known expedient within the art of attaching parts of a control rod to one another.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick Palabrica whose telephone number is 703-306-5756. The examiner can normally be reached on 6:30-5:00, Mon-Thurs..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Carone can be reached on 703-306-4198. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RJP

October 27, 2004

A handwritten signature in cursive script, appearing to read "R. J. Palsbice".